

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A method for setting a new reference value for
2 managing bi-directional relationships between objects in an object model of a
3 relational database, the method comprising the steps of:
4 receiving bi-directional relationship information indicating interrelation
5 between objects having one or more bi-directional relationships;
6 creating proxy objects based on the bi-directional relationship information
7 for selected peer objects having bi-directional relationships, wherein the proxy
8 objects have knowledge regarding a host object to which the proxy objects belong
9 and one of more peer objects with which the host relates through a bidirectional
10 relationship, and wherein the host object is included as a first peer object of the
11 ~~related selected~~ peer objects;
12 receiving a first new peer value relating to a bi-directional relationship to
13 be set in the host object;
14 determining, using one or more of the proxy objects, a second new peer
15 value to be set for a second peer object which has the bi-directional relationship
16 with the host object;
17 setting the first new peer value into the one or more proxy objects; and
18 setting the second new peer value in a proxy object created for the second
19 peer object so that ~~an associated new~~ the second peer object has a bidirectional
20 relationship with the host object without a developer of the object model having to
21 ensure all associated references are maintained;

22 wherein the bi-directional relationship is managed so that pairs of
23 corresponding bi-directional pointers get updated together.

1 2. (Original) The method as claimed in claim 1, wherein the bi-directional
2 relationship information receiving step comprises the steps of:
3 receiving object model meta-data defining relationships between objects in
4 the object model; and
5 retrieving reference value information that represents reference values
6 indicating current peer objects for the bi-directional relationships.

1 3. (Original) The method as claimed in claim 1, wherein the bi-directional
2 relationship information receiving step receives the reference value information
3 from a data storage in which data corresponding to the objects is stored.

1 4. (Original) The method as claimed in claim 1, wherein the bi-directional
2 relationship information receiving step receives the reference value information
3 from a new object that is newly created by a user.

1 5. (Original) The method as claimed in claim 1, wherein the bi-directional
2 relationship information receiving step receives the reference value information
3 that includes a collection of reference values for a bi-directional relationship
4 object which references many peer objects.

1 6. (Previously presented) The method as claimed in claim 1, wherein the
2 proxy object creating step creates proxy objects of uni-directional peer
3 relationships that combined comprise bi-directional relationships.

1 7. (Original) The method as claimed in claim 6, wherein the proxy object
2 creating step creates a proxy object for each of a pair of one-to-one uni-directional
3 peer relationships that form a one-to-one bi-directional relationship.

1 8. (Original) The method as claimed in claim 6, wherein the proxy object
2 creating step creates a proxy object for each of a one-to-many uni-directional peer
3 relationship and one-to-one uni-directional peer relationships that form a one-to-
4 many bi-directional relationship.

1 9. (Original) The method as claimed in claim 6, wherein the proxy object
2 creating step creates a proxy object for each of uni-directional one-to-many peer
3 relationships that form a many-to-many bi-directional relationship.

1 10. (Original) The method as claimed in claim 1, wherein the new peer
2 value determining step comprises a step of passing the new reference value
3 through related proxy objects that are related to the bi-directional relationship.

1 11. (Original) The method as claimed in claim 1, wherein the new peer
2 value contains a collection of reference values which is determined based on the
3 new reference value.

1 12. (Original) The method as claimed in claim 1, wherein the new
2 reference value represents addition, removal or change of a reference value.

1 13. (Original) The method as claimed in claim 1, wherein the setting step
2 sets a value null when the determining step determines to remove the bi-
3 directional relationship.

1 14. (Original) The method as claimed in claim 1, wherein the setting step
2 sets a new peer value by replacing an old reference value with the new peer value.

1 15. (Original) The method as claimed in claim 1, further comprising steps
2 of:

3 determining, using one or more of the proxy objects, another new peer
4 value to be set in a new peer object which is referenced by the new reference
5 value set for the selected object; and

6 setting another new peer value to a proxy object created for the new peer
7 object.

1 16. (Original) The method as claimed in claim 1, further comprising steps
2 of:

3 determining, using one or more of the proxy objects, an updating reference
4 value for a related object that is related to the selected object through one or more
5 original or new bi-directional relationships; and

6 setting the updating reference value in a proxy object created for the
7 related object.

1 17. (Original) The method as claimed in claim 16, wherein the updating
2 reference value determining step and the updating reference value setting step are
3 repeated for all related objects so as to maintain bi-directional relationship
4 integrity.

1 18. (Original) The method as claimed in claim 16, wherein the updating
2 reference value determining step comprises a step of passing the new reference
3 value through related proxy objects that are created for the related objects.

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19-50 (Canceled).